



# **National Assessment of Educational Progress:**

## **National Assessment Governing Board New Member Orientation**

National Assessment Governing Board Meeting  
March 5, 2020

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**James “Lynn” Woodworth, PhD**  
Commissioner  
National Center for Education Statistics

**Peggy G. Carr, PhD**  
Associate Commissioner  
Assessment Division  
National Center for Education Statistics

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# Orientation Overview

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**1**

**Governance**

**2**

**Assessment Content and Design**

**3**

**Development and Administration**

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**Reporting and Dissemination**

**5**

**Participants, Stakeholders, and Expert Panels**

**6**

**Budget**

**7**

**Orientation Highlights**

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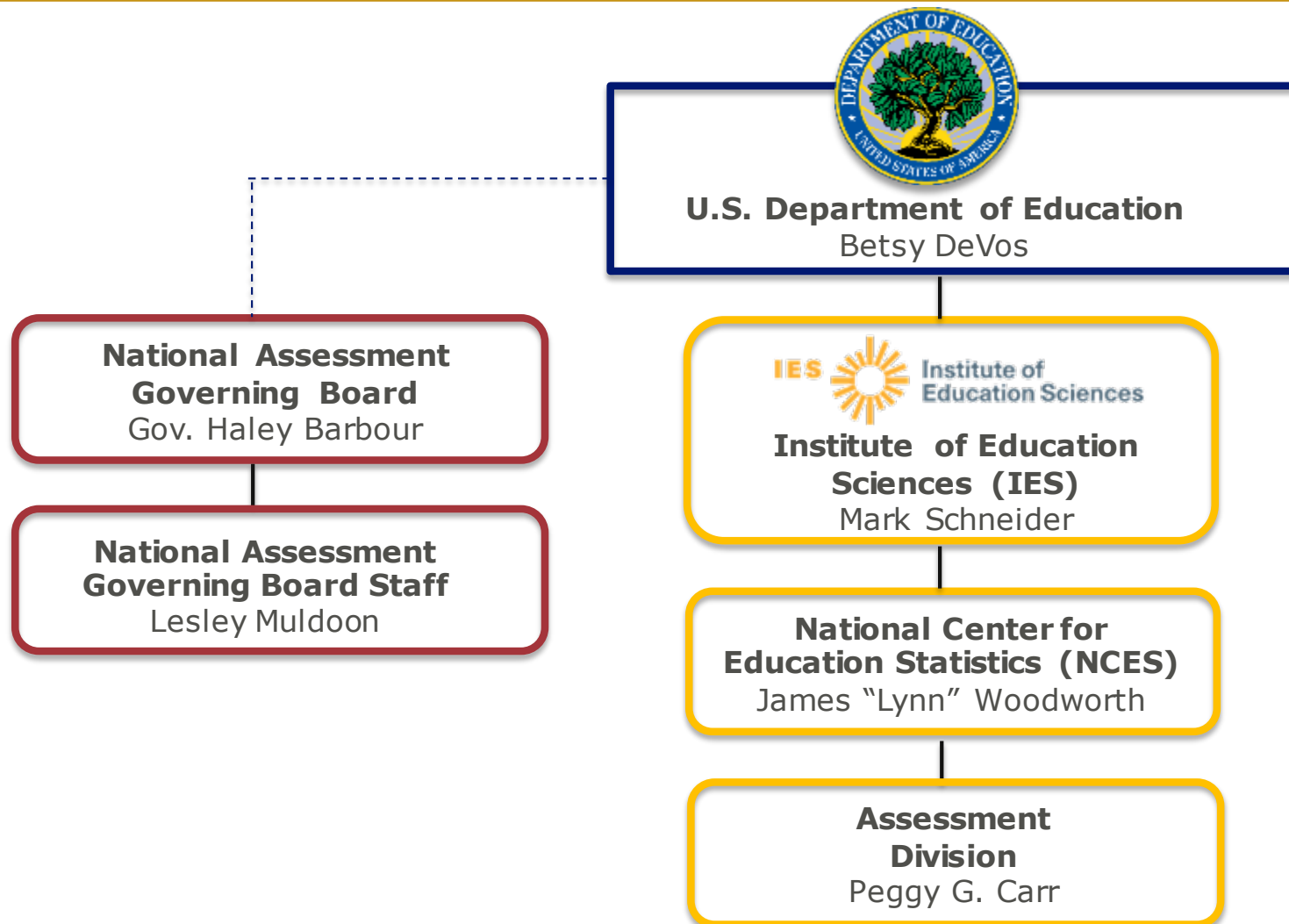
# Governance

# Overview of Governance

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- Organizational structure
- NAEP legislation, *Public Law 107-279*
- Partnering entities and responsibilities
- NAEP contractor support
- Historical milestones
- Major NAEP policies

# Governance



# NAEP Legislation

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## *Public Law 107-279*

- Elementary and Secondary Education Act (**1965**)
  - No Child Left Behind (**2001**)
  - Every Student Succeeds Act (**2015**)
- **Governing Board** oversees and sets NAEP policy
- **NCES** manages NAEP administration and operations

# NAEP Legislation (cont'd)

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## *Public Law 107-279*

- Requires grades 4 and 8 state-level math and reading **every two years**
- Assesses math and reading in grade 12 **every four years**
- May assess other subjects, **if funding permits**
- Must administer **long-term trend** assessments in math and reading for ages 9, 13, and 17

# NAEP Roles and Responsibilities

## National Assessment Governing Board

- ▶ Assessment Methodology
- ▶ Framework Development
- ▶ Item Review
- ▶ Achievement-Level Setting
- ▶ Release Event Planning



## Contractors

## National Center for Education Statistics

- ▶ Assessment Design
- ▶ Item Development
- ▶ Sampling and Data Collection
- ▶ Scoring, Scaling, and Analysis
- ▶ Reporting and Dissemination
- ▶ Release of Data

### ***Key Partners:***

- ▶ Council of the Great City Schools
- ▶ Council of Chief State School Officers



# Governing Board Responsibilities

More details: *Public Law 107-279*

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- ✓ Set assessment schedule
- ✓ Design assessment methodology
- ✓ Develop jurisdictional comparison standards and procedures
- ✓ Develop assessment objectives, specifications, achievement levels, and reporting and dissemination guidelines
- ✓ Exercise final authority on the appropriateness of all cognitive and noncognitive NAEP items
- ✓ Plan and execute the initial report card release event

# NCES Responsibilities

More details: *Public Law 107-279*

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- ✓ Develop credible assessment design, collection, analysis, release, and dissemination procedures
- ✓ Administer grades 4 and 8 reading and math assessments every two years
- ✓ Administer other subjects every 3 to 8 years
- ✓ Set data collection and random sampling standards
- ✓ Publish and release NAEP results

# NCES Alliance Contractors

(\$628M for the 2019–2024 Assessment Cycle)

## Educational Testing Service

- Planning and coordination
- Design, analysis, and reporting
- Item development
- Platform development

## Pearson

- Materials, distribution, processing, and scoring

## Westat

- NAEP Support and Service Center
- Sampling and data collection

## Huntington Ingalls Industries

- Web/technology development, operations, and maintenance

## Management Strategies

- Scheduling and forecasting

# Governing Board Contractors

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## **HumRRO**

- Technical support

## **The Hatcher Group**

- Communications

## **Reingold**

- Website services

## **WestEd**

- Assessment frameworks

# Historical Milestones

- ▶ **1969** First administration in citizenship, science, and writing
- ▶ **1986** NAEP split into two strands—main NAEP and long-term trend
- ▶ **1988** National Assessment Governing Board appointed by the Secretary of Education
- ▶ **1990** First trial state-level assessments in grade 8 mathematics
- ▶ **2001** No Child Left Behind mandate for grades 4 and 8 math and reading every two years
- ▶ **2002** Trial urban district assessments
- ▶ **2009** 12th grade state-level pilot; interactive computer tasks for science
- ▶ **2017** Transition to digitally based assessments in reading and mathematics

# Major NAEP Policies

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The **Governing Board sets policies** that shape the content and methodology of NAEP



Key policies include:

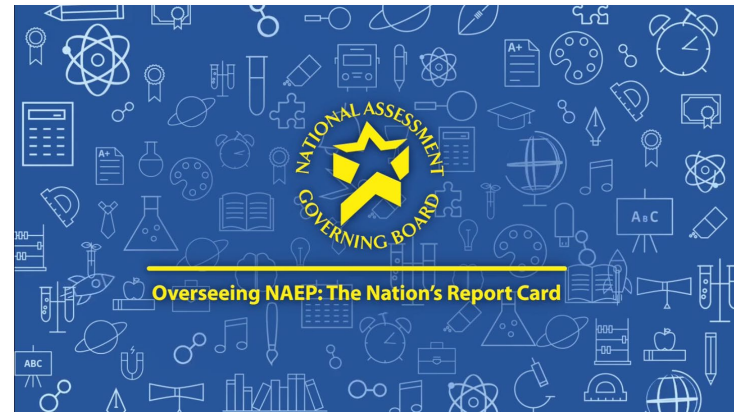
- Developing Achievement Levels
- Reporting and Disseminating NAEP Results
- Setting Framework Development Policy
- Testing and Reporting on Students with Disabilities and English Language Learners

# Must-See Orientation Videos

## NCES



## Governing Board



# Key Takeaways

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- NAEP mathematics and reading are required under the **Elementary and Secondary Education Act of 1965**, which was reauthorized as the **Every Student Succeeds Act of 2015**
- The **Governing Board** develops policy and oversees NAEP, and **NCES** designs and administers the assessments
- NCES must administer NAEP **math and reading every other year at grades 4 and 8, and every four years at grade 12**
- NAEP **contractors and key partners** contribute to program success





# **Assessment Content and Design**

# Overview of Assessment Content and Design

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- Components of NAEP
- Subjects
- Assessment design
- Sampling
- Jurisdictional coverage

# Components of NAEP

## The National Assessment of Educational Progress

### MAIN

**National**  
Public & Non-public  
Grades 4, 8, & 12

**State**  
Public  
Grades 4 & 8  
Grade 12 Pilot

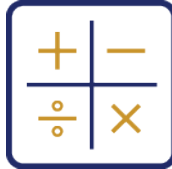
**Trial Urban District**  
Public  
Grades 4 & 8

### LONG-TERM TREND

**National**  
Public & Non-public  
9, 13, & 17 yr olds

# Main NAEP: Subjects Assessed

Mathematics



Reading

Writing



Science

Civics



Geography

U.S. History



Economics

Vocabulary



Music

Visual Arts



Technology and  
Engineering Literacy

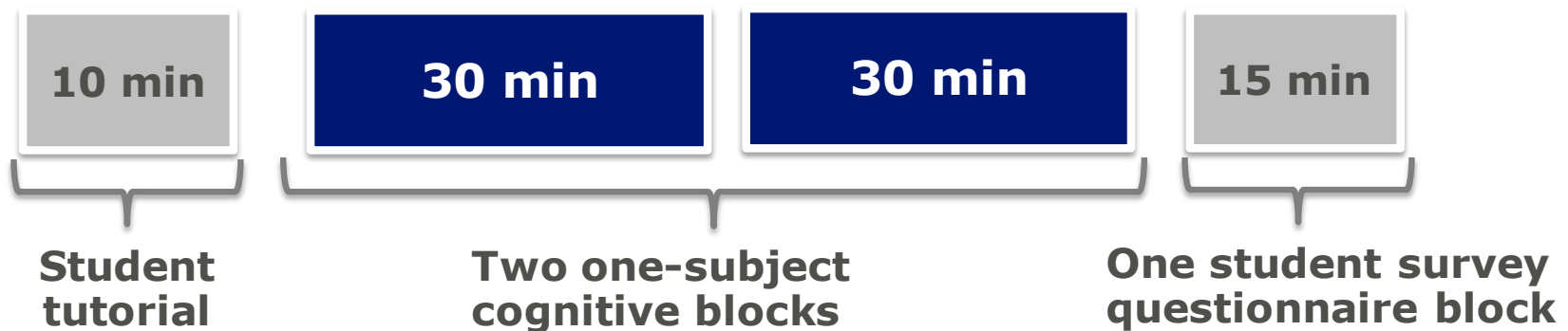
# NAEP Assessment Design

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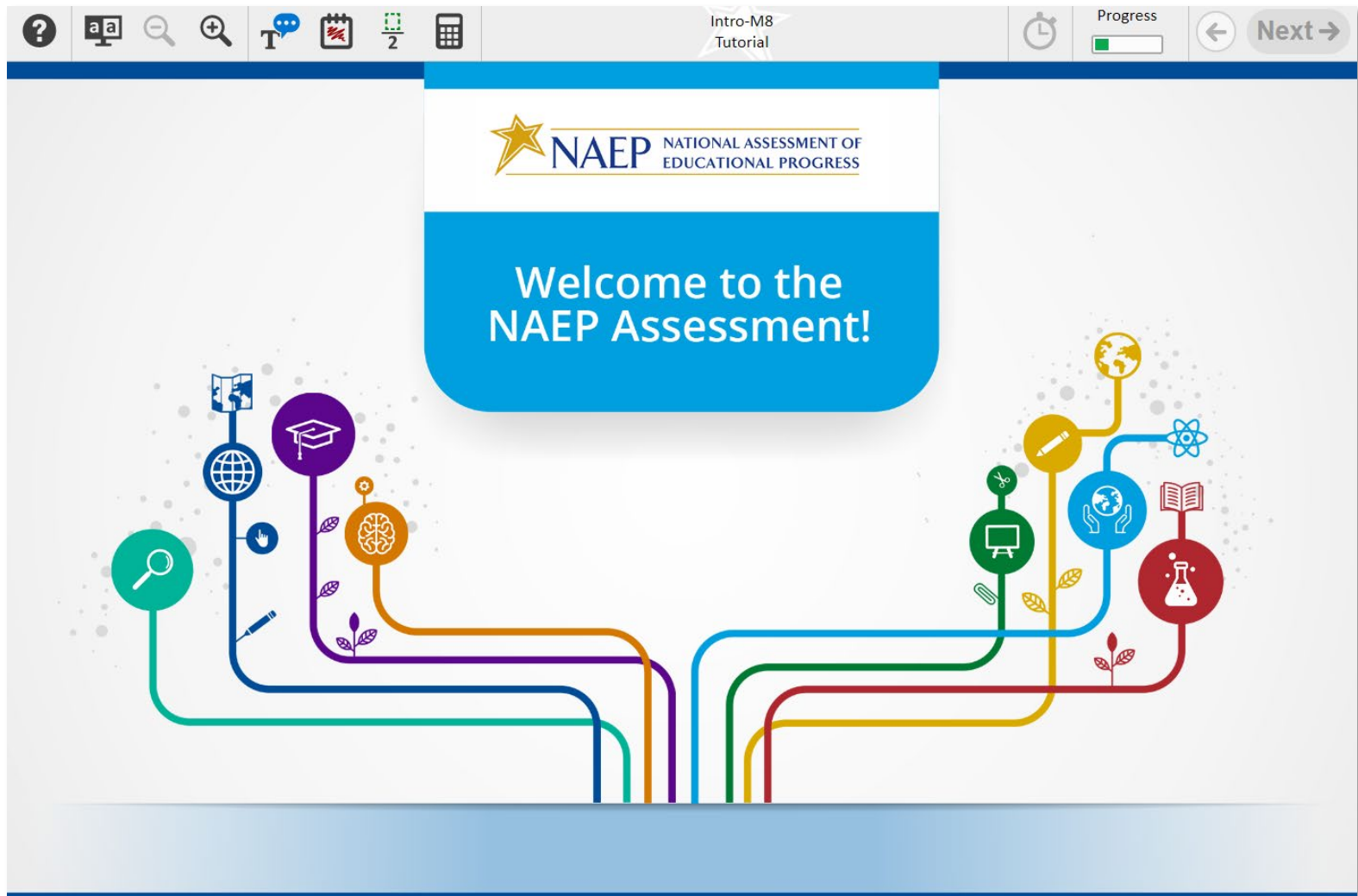
- Long test, short form
- Matrix design **does not** allow for reliable student- or school-level reporting
- Cognitive **items** form **blocks**; blocks form **booklets**
- In 2017, mathematics and reading transitioned from **paper and pencil to a digital format**; additional subjects followed

# NAEP Assessment Design (cont'd)

- Each sampled student receives a booklet: **two 30-minute cognitive item blocks**



# Assessment Content: Students' Experience



## PART 2

# Number of Items, Blocks, and Booklets

## 2019 Mathematics

	# of Items	# of Blocks	# of Booklets
Grade 4	246	14	98
Grade 8	242	14	98
Grade 12	182	11	55



# Assessment Content: Contextual Questionnaires

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- Student
  - Demographic characteristics
  - Opportunities to learn in and outside of the classroom
  - Educational experiences
- Teacher
  - Training
  - Instructional practices
- School
  - Policies
  - Characteristics

# NAEP Sampling

**1 Identify schools** based on U.S. Department of Education's public school system database

**2 Classify schools** into groups by type of location and then racial/ethnic composition

**3 Sort schools** by student achievement measure

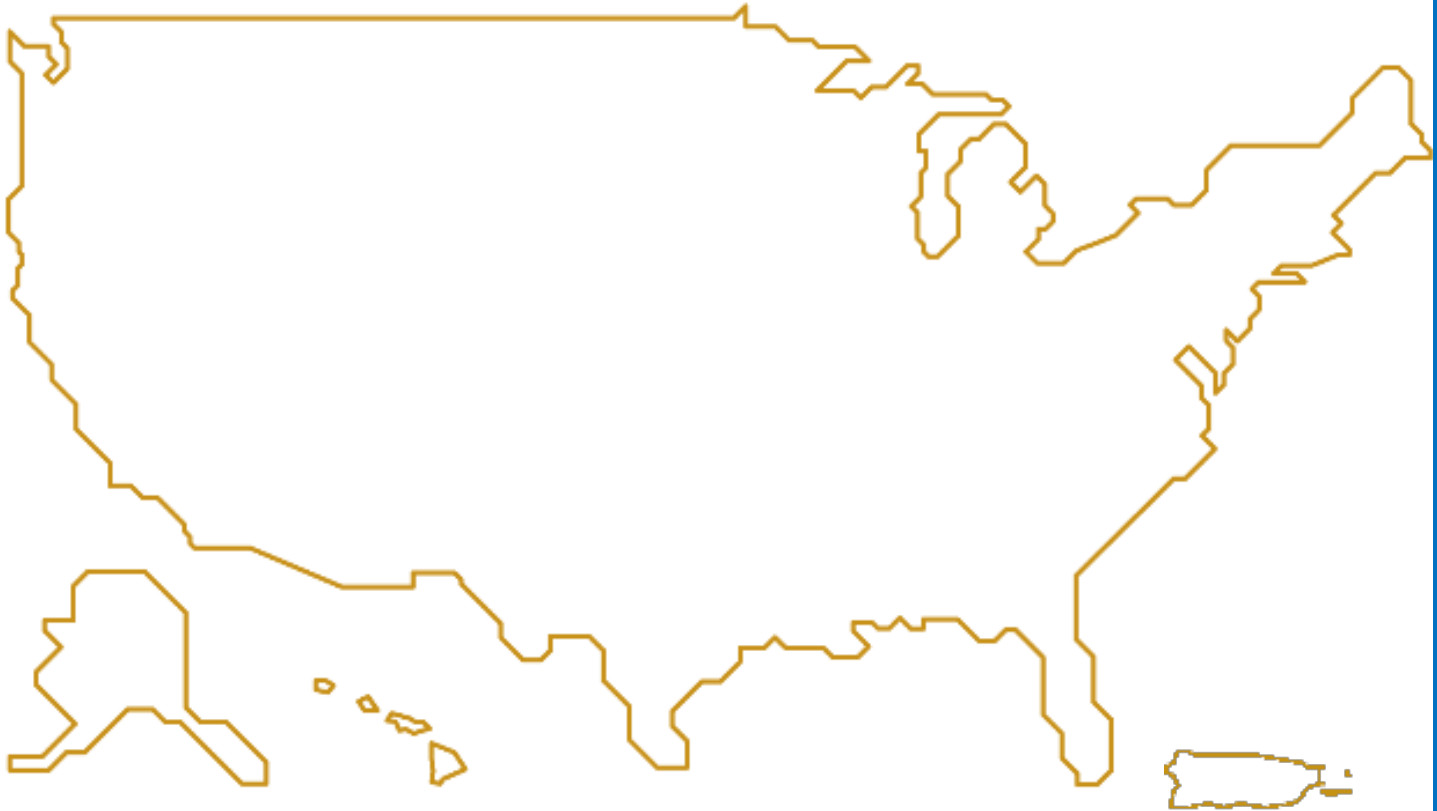
**4 School groupings** placed into comprehensive ordered list

**5 Select sample** of schools with probability proportional to school size

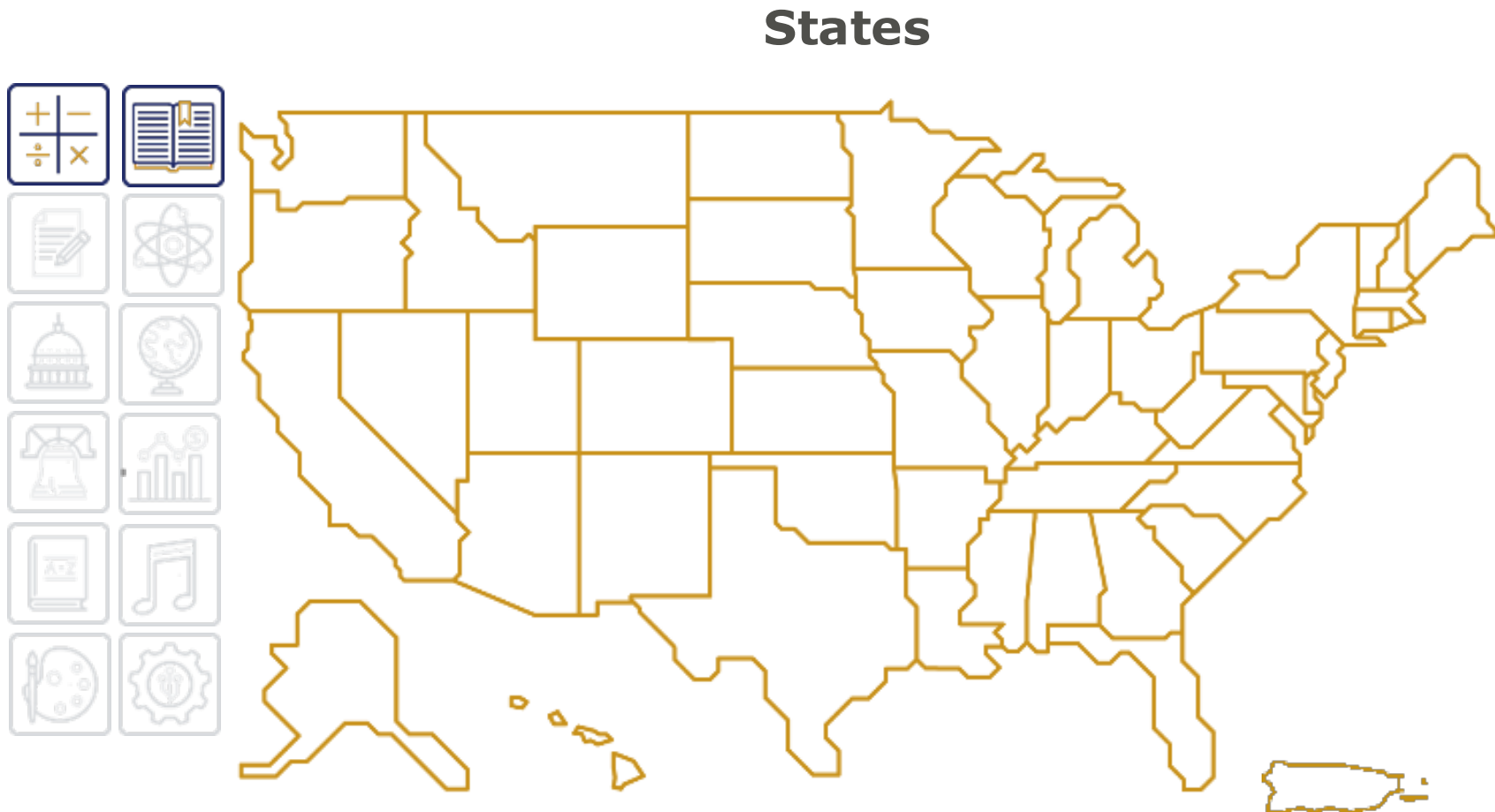
**6 Confirm schools** by sending list to each state department of education

# Jurisdictional Coverage

## The Nation

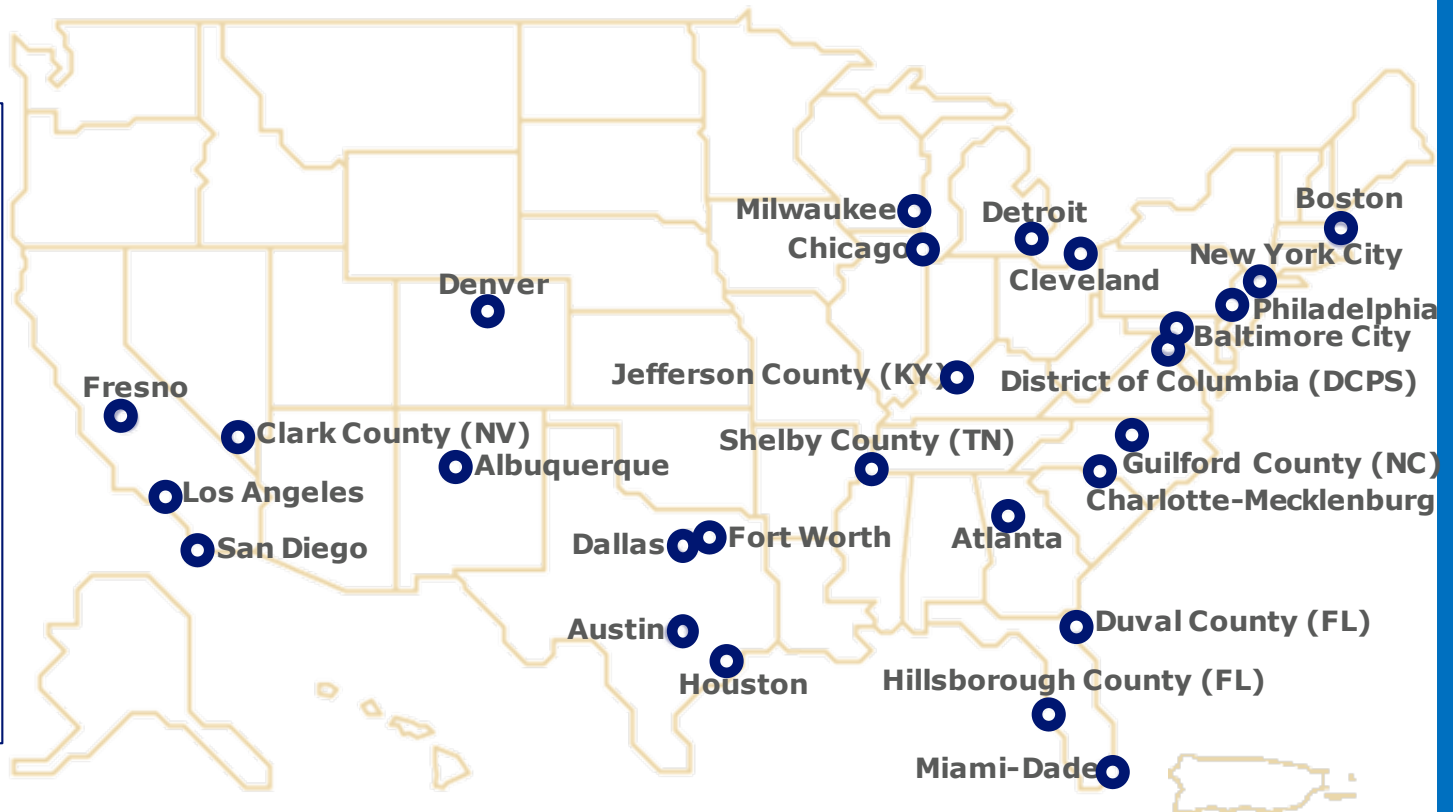
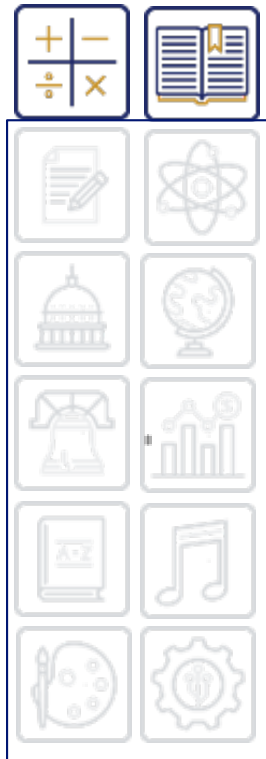


# Jurisdictional Coverage



# Jurisdictional Coverage

## Trial Urban District Assessment (TUDA)



# Student and School Participation Numbers

	# of Participating Students	# of Participating Schools
<b>2014 Civics</b> (national)	<b>9,100 eighth-graders</b>	<b>410 schools</b>
<b>2019 Math and Reading</b> (national, state, and TUDA)	<b>300,000 fourth-graders</b> <b>290,600 eighth-graders</b>	<b>19,500 schools</b>

# Key Takeaways

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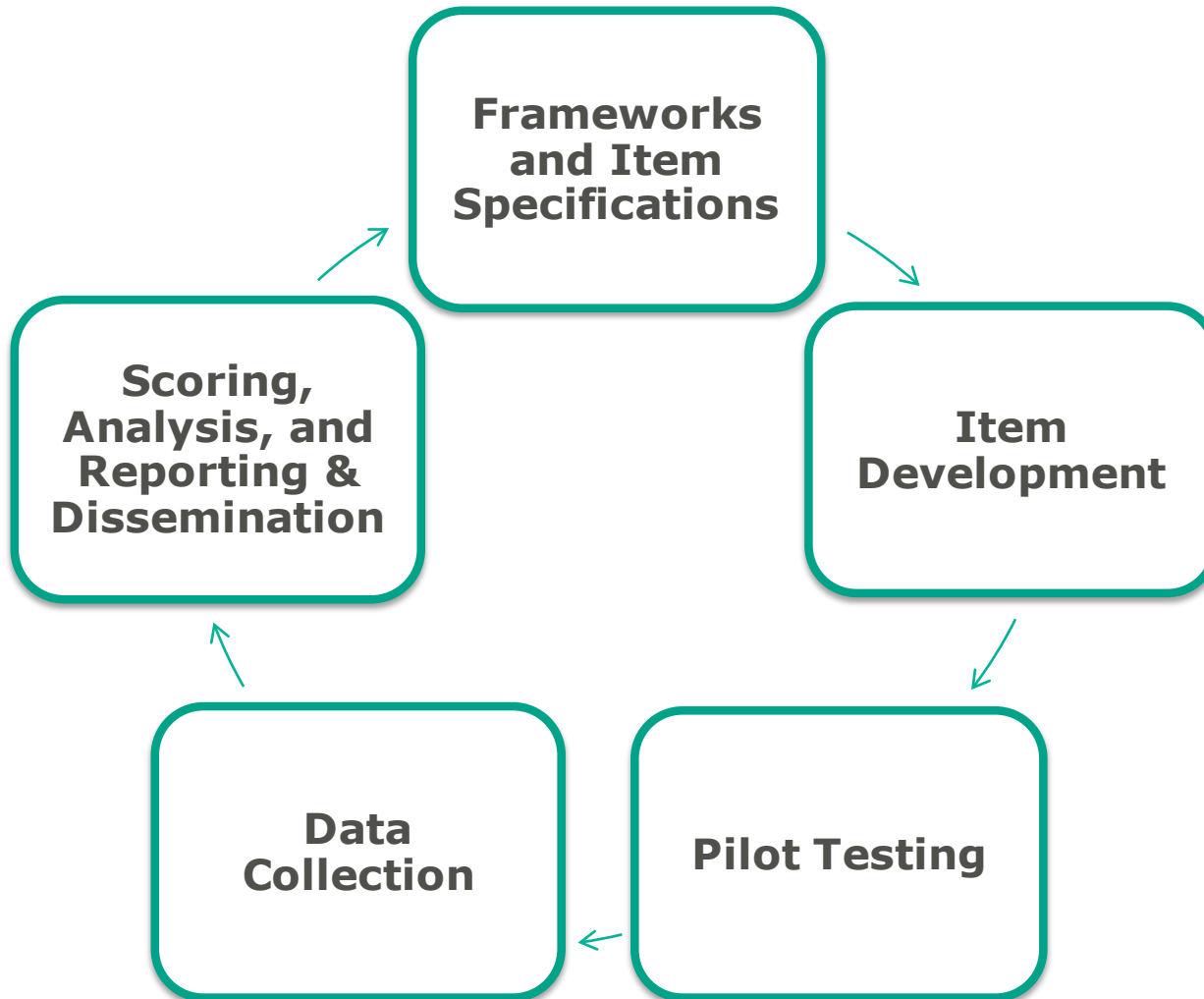
- NAEP has two components: **main and long-term trend**
- Students receive a sample of **cognitive items**
- Students, teachers, and administrators answer **contextual questionnaires**
- Students are **sampled** in schools **proportionate to size** within states and selected urban districts
- **Math, reading, science, and writing** are sampled at the **national and state levels**; all other subjects are at the national level only



# Development and Administration



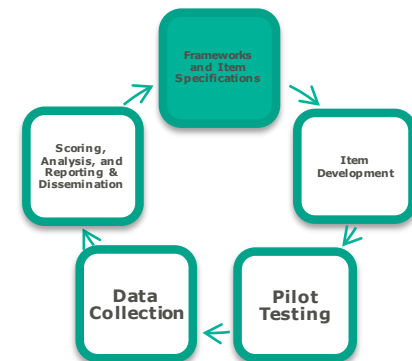
# Overview of Development and Administration



# Content Frameworks

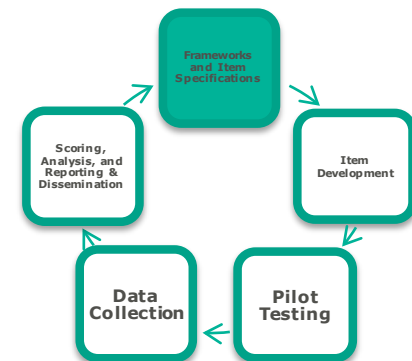
The **Governing Board** creates frameworks through consensus process

- **Content framework** documents define the content and skills to be measured
- **Test specification** document describes how to construct the instrument



# Governing Board: Assessment Development Process

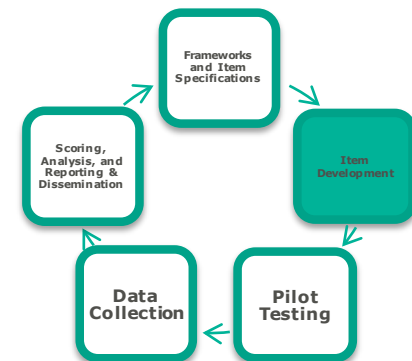
1. ADC Discussion with External Experts (Framework Review)
2. ADC Recommendation for the Assessment
3. Board Action on Charge (if update is needed)
4. Panel Meetings to Develop Draft Framework
5. Board Review & Public Comment
6. Board Action on Framework
7. Assessment Developed
8. Assessment Administered



# NCES Item Development Process

**NCES develops assessment items** in accordance with the Governing Board's frameworks and specification documents

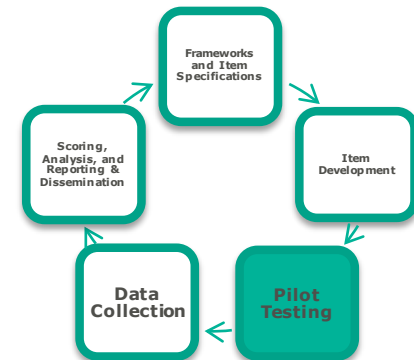
- **Internal reviews by** content experts and teachers examine political sensitivity and bias
- **Standing committees** review the appropriateness, representativeness, and quality of items



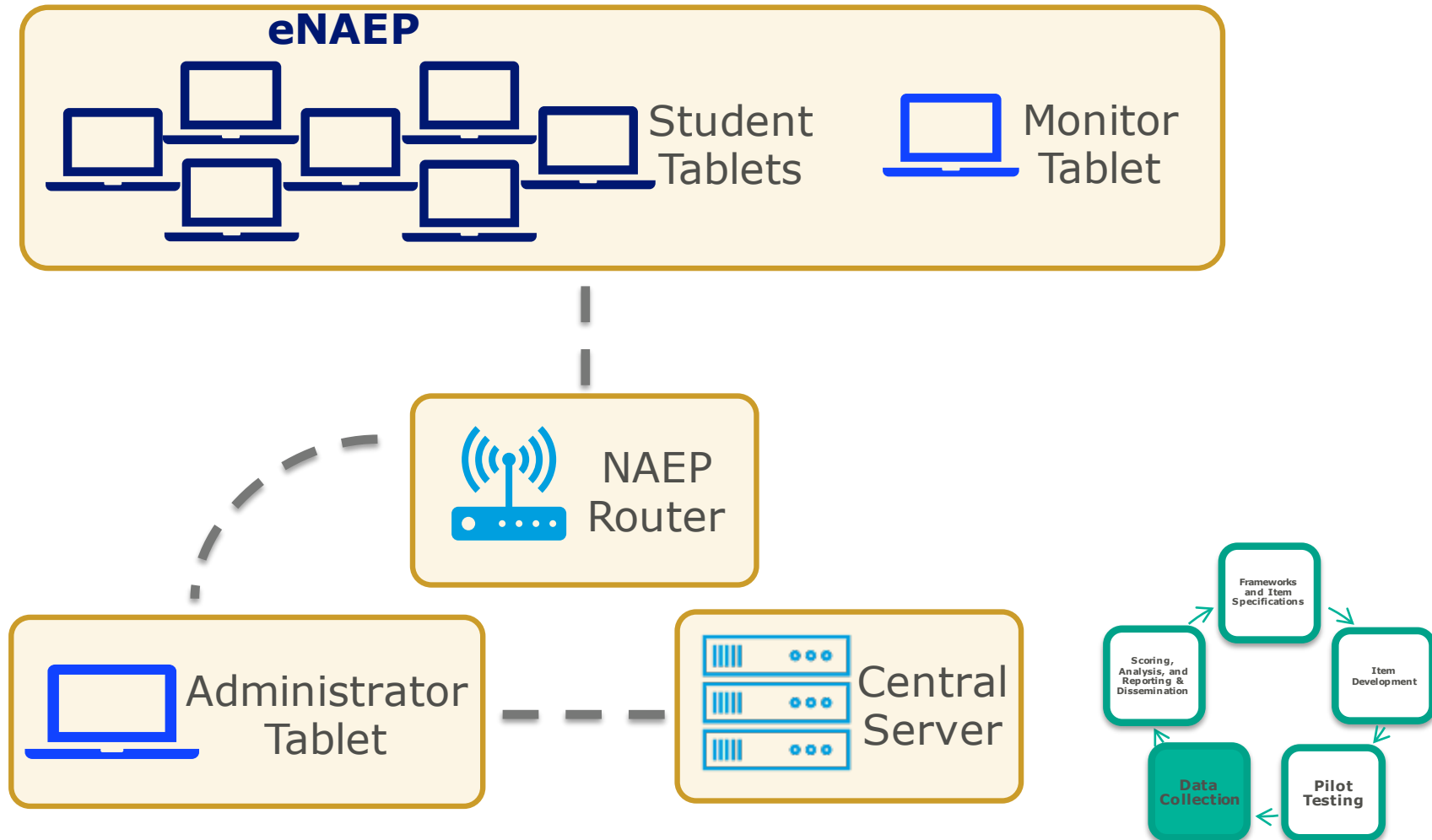
# Pilot Testing

The purpose of national-level pilot testing is to gain information about

- Item clarity
- Item difficulty levels
- Timing
- Feasibility
- Administration logistical considerations



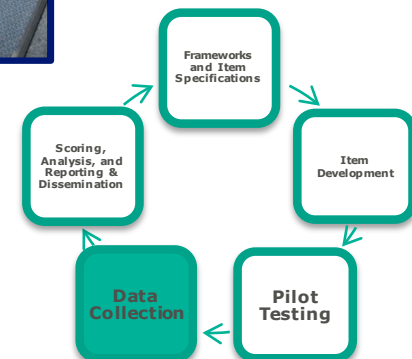
# Current NAEP Delivery Model



# NAEP 2019 Data Collection

Math, reading, and science at  
grades 4, 8, and 12

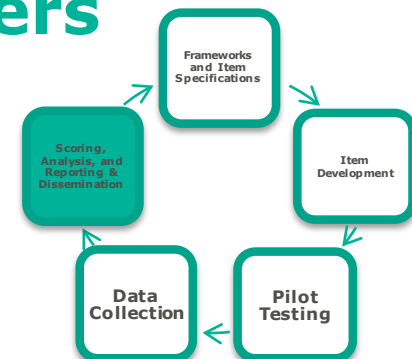
- **1,000,000** students
- **19,500** schools
- **57,000** sessions
- **36,000** tablets
- **2,600** routers
- **5,000** field staff
- **60** Help Desk staff



# Scoring Process

NCES **scores multiple-choice items electronically** and employs **human scorers for short and extended constructed-response items**

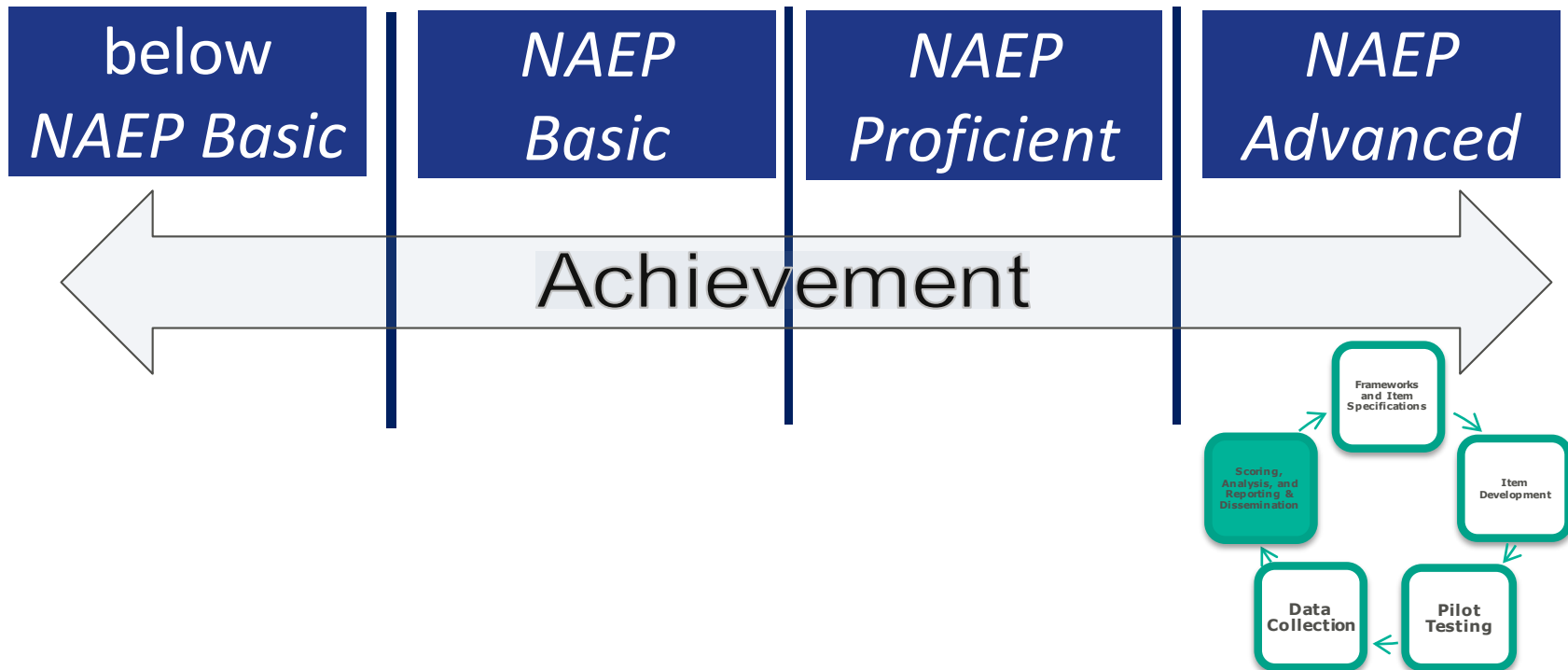
- Develops **scoring guides** that match criteria in assessment frameworks
- Recruits and trains qualified **scorers**
- Monitors **scoring consistency**





# Governing Board Achievement Levels Standards Setting

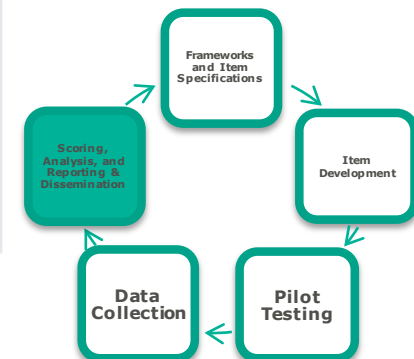
- Process of determining cut scores along NAEP scale that separates achievement into different categories of performance



# Release of NAEP Results

## PART 3

Subject	Release Timeline
<b>Grades 4 and 8 math and reading</b> (national and state)	Within <b>6 months</b> after administration
<b>Other assessments</b>	Within <b>12 months</b> after administration



# NAEP Assessment Activities

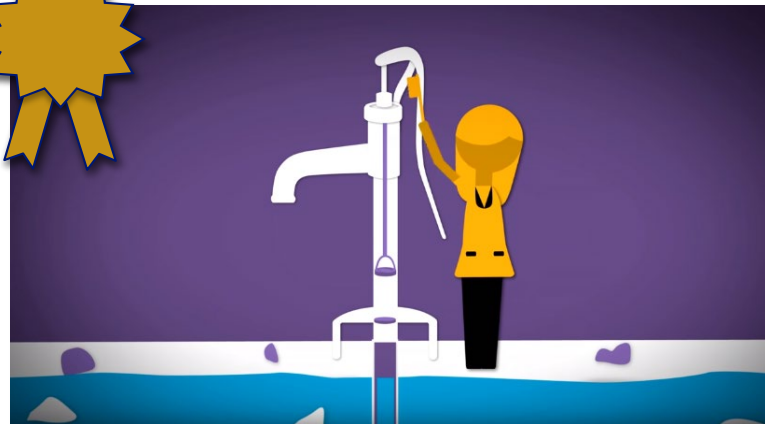
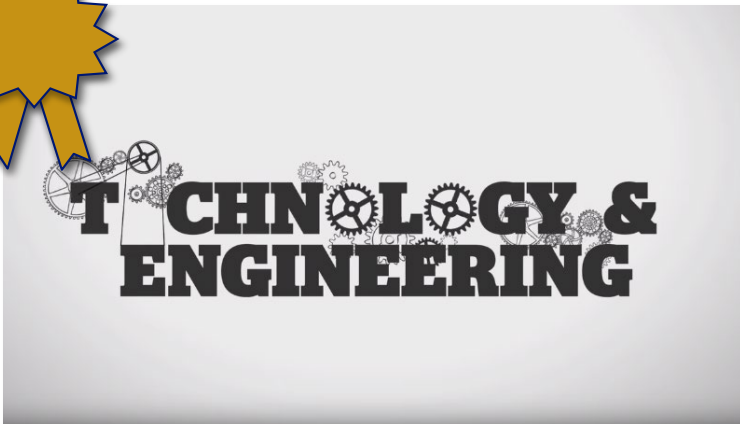
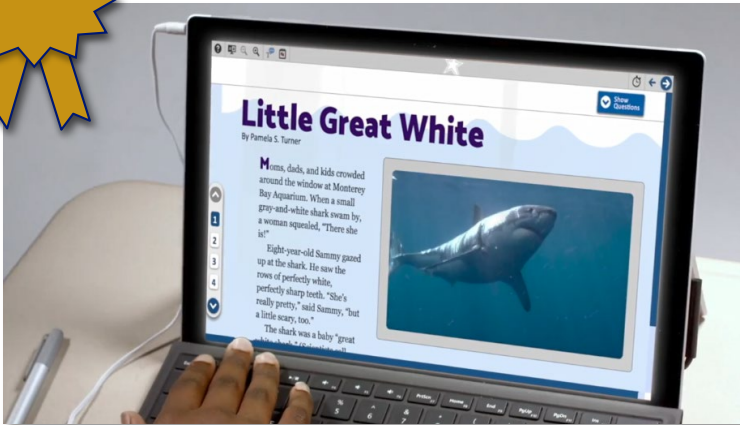
## (as of March 3\*)

Year	Item Development	Pilot Testing	Operational Assessment	Analysis & Reporting
2021	2025 Math, Reading (4/8)	<b>2023 Math (4/8)</b>	2021 Math, Reading (4/8) 2021 Civics, U.S. History	2021 Math, Reading (4/8)
2022	2025 Math, Reading (4/8)	<i>No pilot testing in 2022 due to ability to use previously piloted items in LTT Math and Reading 2024</i>	<i>No operational assessments scheduled for 2022</i>	2021 Civics, U.S. History
2023	2027 Math, Reading (4/8/12) 2027 Science 2027 TEL	2025 Math, Reading (4/8)	<b>2023 Math, Reading (4/8/12)</b> 2023 Science 2023 TEL 2023 Transcript Studies	<b>2023 Math, Reading (4/8)</b>
2024	2027 Math, Reading (4/8/12) 2027 Science 2027 TEL 2028 LTT Math, Reading	<i>No pilot testing in 2024 due to no scheduled operational assessments in 2026</i>	2024 LTT Math, Reading	<b>2023 Math, Reading (12)</b> 2023 Science 2023 TEL 2023 Transcript Studies

\*The NAEP Assessment Activities calendar is subject to change.

# Must-See Assessment Videos

## NCES



# PART 3

# Key Takeaways

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- Governing Board **defines content** to be assessed
- Governing Board develops **content frameworks and specifications**
- NCES **operationalizes** the assessment through the **item development process**, including piloting
- NCES **collects, scores, analyzes, and reports** on assessment data
- The assessment cycle can span up to **five years**



# Reporting and Dissemination

# Overview of Reporting and Dissemination

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- Reporting metrics
- Reporting products
- Release activities
- 2019 NAEP Mathematics and Reading Results
- New data from digital assessments
- Misuses of NAEP
- Special studies

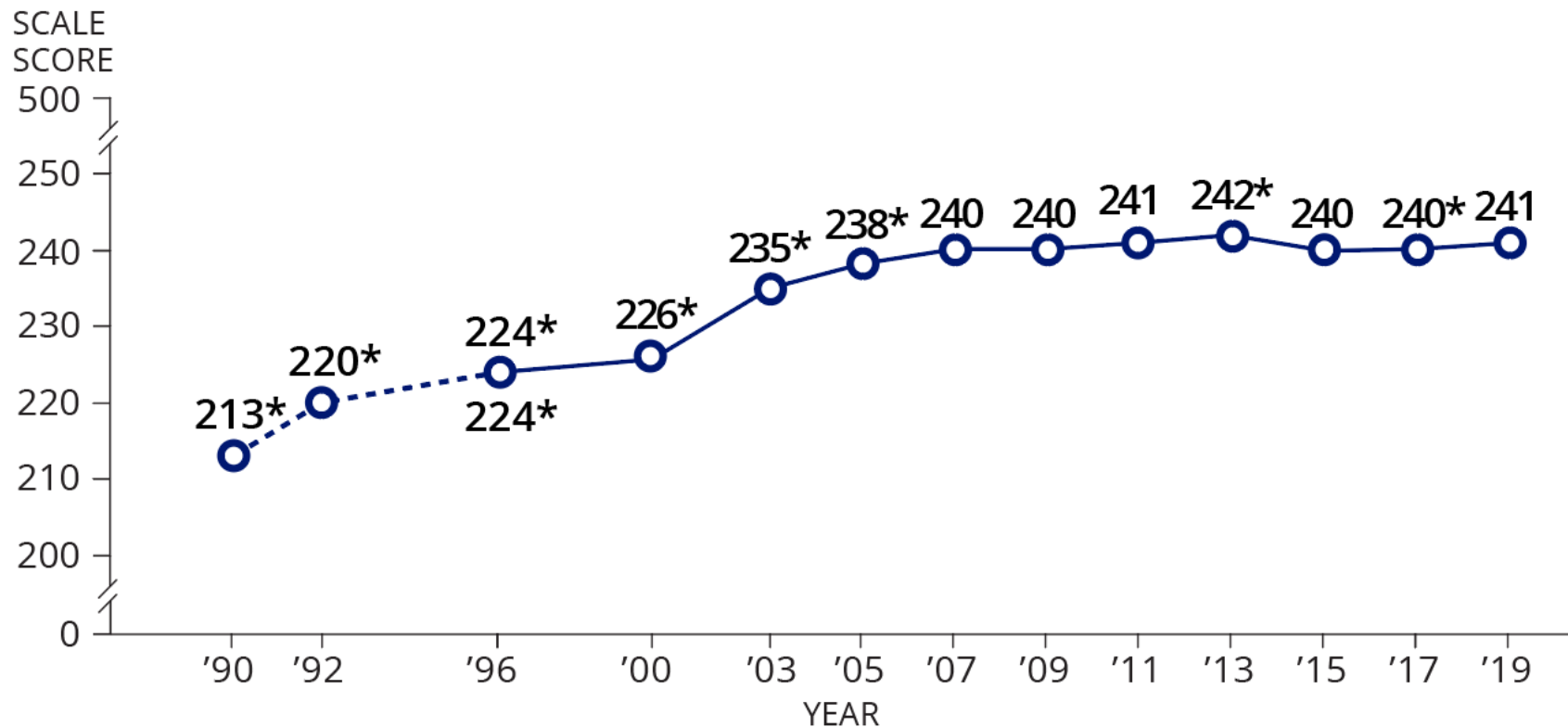
# Reporting Metrics

- **Scale scores:** 0–500 points or 0–300 points depending on the subject
- **Percentile scores:** scale scores for lower (10th and 25th), middle (50th), and higher (75th and 90th) performing students
- **Achievement levels (main NAEP):** percentage reaching or exceeding cut points for
  - *NAEP Basic*
  - *NAEP Proficient*
  - *NAEP Advanced*
- **Performance levels (long-term trend):** percentage reaching or exceeding 150, 200, 250, 300, and 350 points on long-term trend assessments



# Scale Scores:

## NAEP Mathematics Grade 4

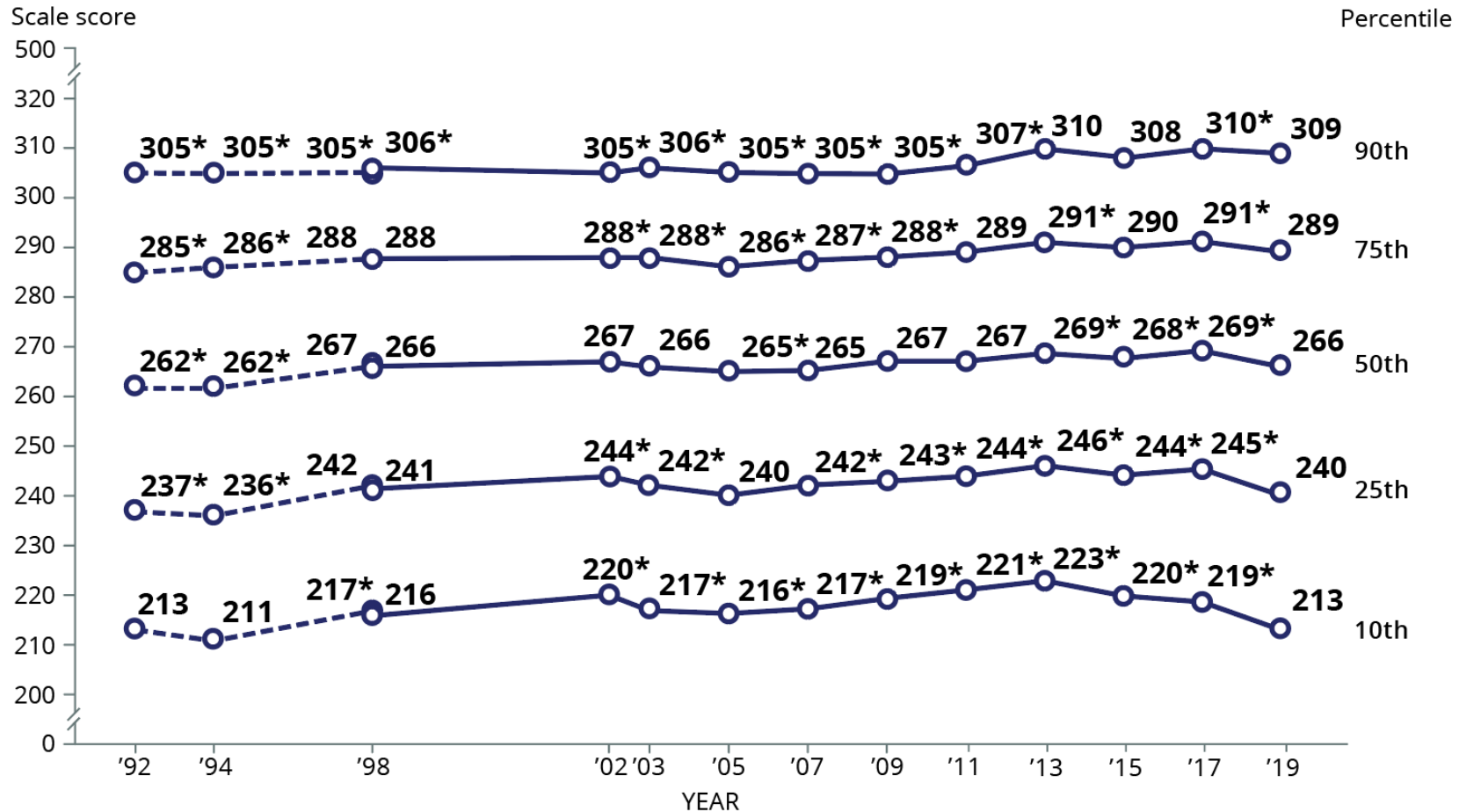


\* Significantly different ( $p < .05$ ) from 2019

---- Accommodations not permitted  
— Accommodations permitted

# Percentile Scores:

## NAEP Reading Grade 8

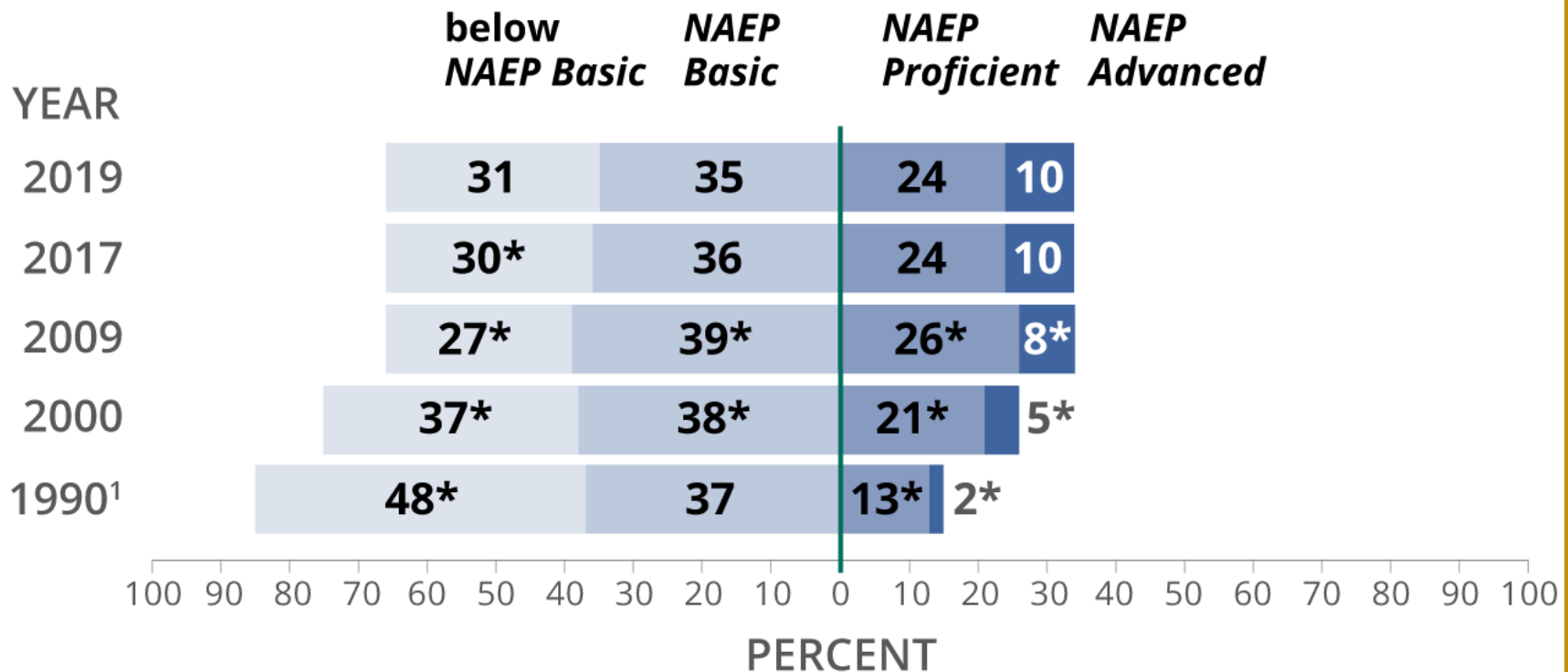


\* Significantly different ( $p < .05$ ) from 2019

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# Achievement Levels:

## NAEP Mathematics Grade 8



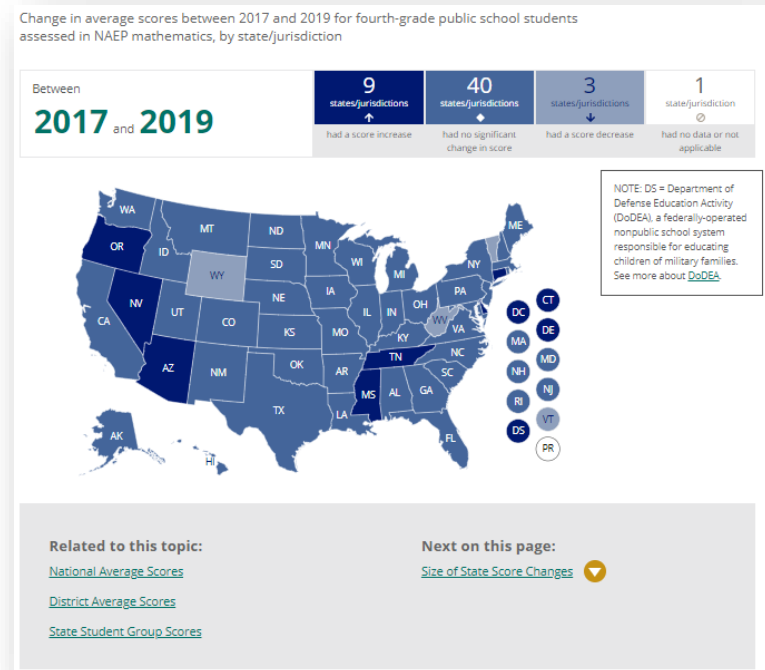
\* Significantly different ( $p < .05$ ) from 2019

¹ Accommodations not permitted

# Reporting Products

## NationsReportCard.gov

- Digital report cards
- NAEP Data Explorer (NDE)
- NAEP Questions Tool
- Item Maps
- State Profiles
- District Profiles
- Achievement Gap Dashboard
- Public, Private, and Charter Schools Dashboard
- Restricted data license
- Application programming interface (API)



# Release Activities

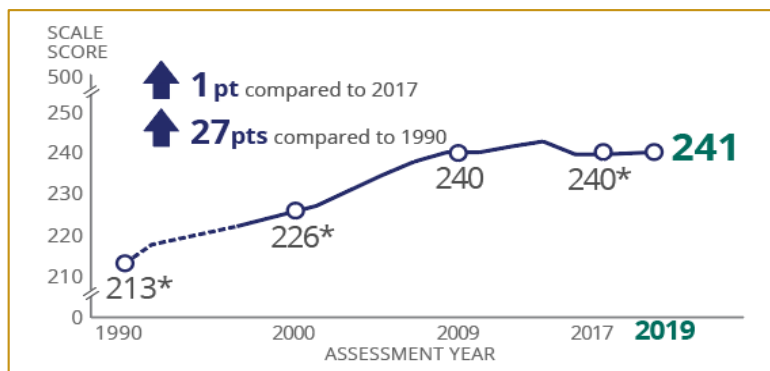
- Governing Board sets official **release date**
- NCES Commissioner releases the **data at nationsreportcard.gov**
- Governing Board plans and executes initial **release day event**
  - Live audience and online streaming
  - Panel of experts discuss findings
- **Pre-release briefings** held for key stakeholders (e.g., White House, Congress, state chiefs, governors)



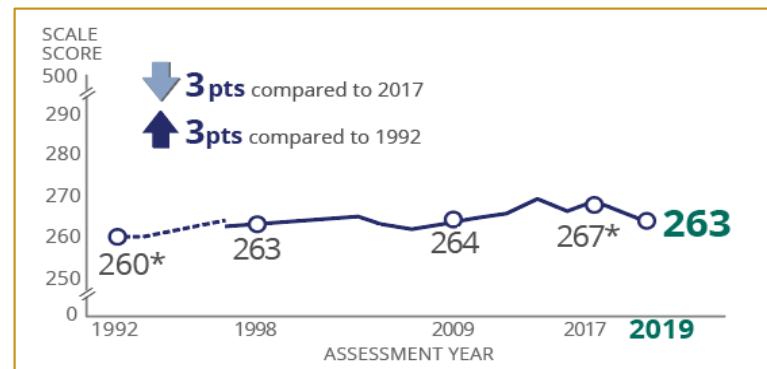
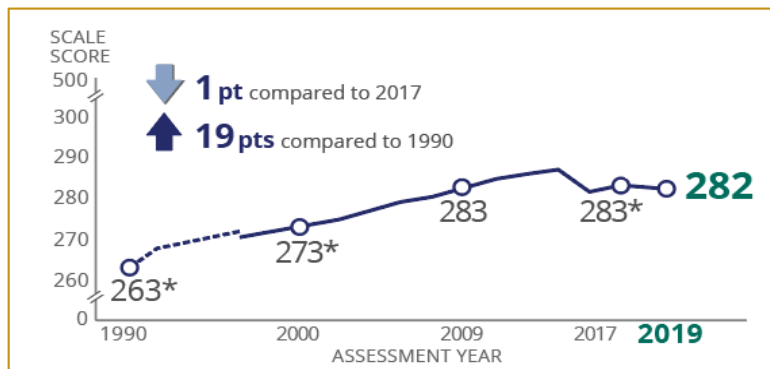
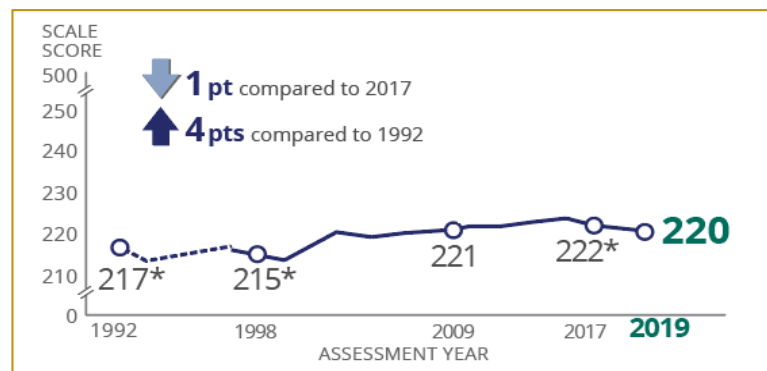
# 2019 Report Card Results

## PART 4

### MATHEMATICS



### READING



\* Significantly different ( $p < .05$ ) from 2019.

↑ Score increase

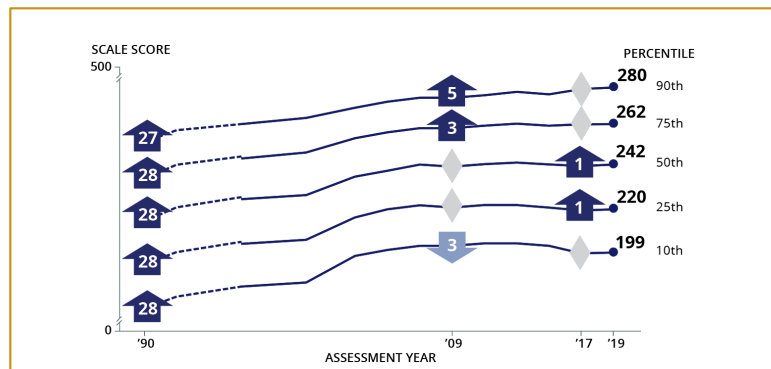
↓ Score decrease

---- Accommodations not permitted  
— Accommodations permitted

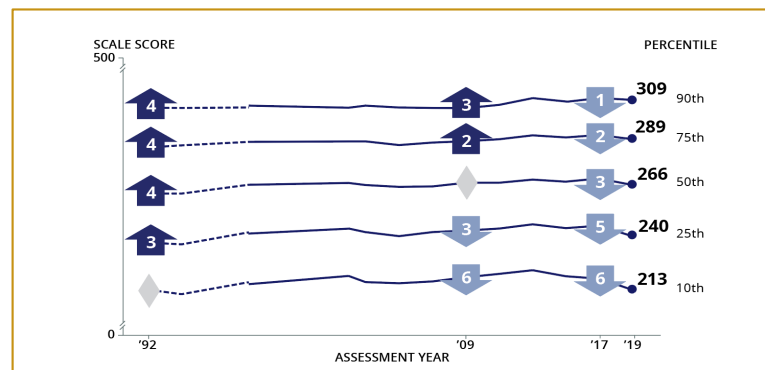
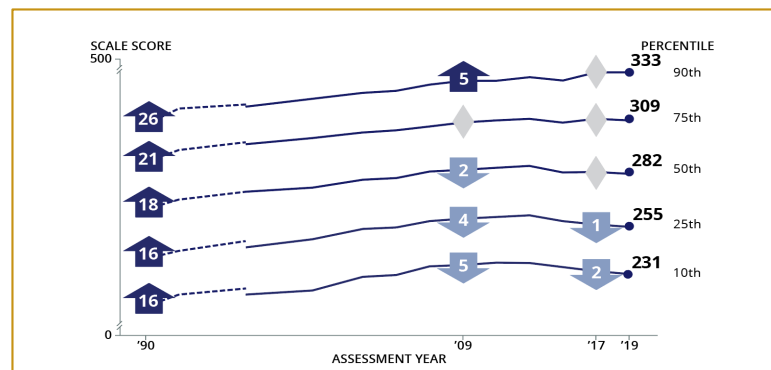
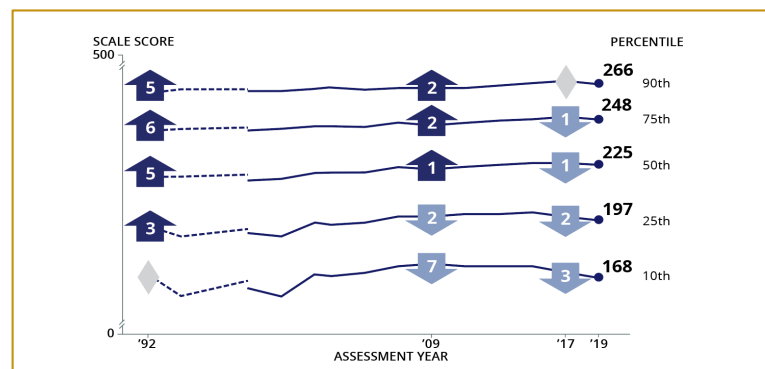
# 2019 Report Card Results (cont'd)

## PART 4

### MATHEMATICS



### READING



▲ Score increase    ▼ Score decrease    ◆ No significant change

---- Accommodations not permitted  
 — Accommodations permitted

# 2019 Release Day Engagement

## Release Day: NAEP Social Media Metrics

**twitter**

**75,384** impressions  
**2,098** total engagements  
**2.78%** engagement rate

**facebook**

**5,235** impressions  
**373** total engagements  
**7.13%** engagement rate

*The New York Times*  
***Reading Scores on National Exam  
Decline in Half the States***



**Despite Common Core and more testing,  
reading and math scores haven't budged  
in a decade**



**American students' performance lags on Nation's  
Report Card**



# NAEP in the News

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## **The Washington Post**

**Students in Washington region show little change in national test scores**

## **POLITICO**

**Student scores hold steady on 'Nation's Report Card,' though gaps persist**

## **Orlando Sentinel**

**Nation's report card: 'Something very good is happening in Florida'**

## **EDUCATION WEEK**

**Nation's Report Card: Achievement Flattens as Gaps Widen Between High and Low Performers**

# Proper Interpretations of NAEP Data



## When Bad Things Happen to Good NAEP Data

By Stephen Sawchuk

July 24, 2013 | Includes updates and/or revisions.

### Avoiding “MisNAEPery”



- *NAEP Proficient* does not equal “at grade level” performance
- Correlation is not causation
- NAEP data are estimates with sampling and measurement error
- NAEP scores cannot be added, subtracted, multiplied, or divided without accounting for their statistical properties

# Data Available Through Digital Assessments

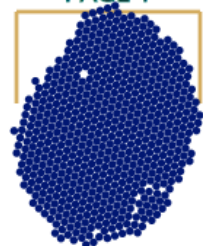
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- Digital assessments provide **insight into how students approach cognitive items**
  - Timing/completion data
  - Reaction to task features
- Contextual survey items provide **data about students' digital experiences** in and out of school
- New data can **expand the reporting** of NAEP results

# Process Data From 2017 Reading

TIME LAPSE 0:00 ANIMATION SPEEDS 2X 10X 50X  

PAGE 1 PAGE 2 PAGE 3 PAGE 4 PAGE 5



Start

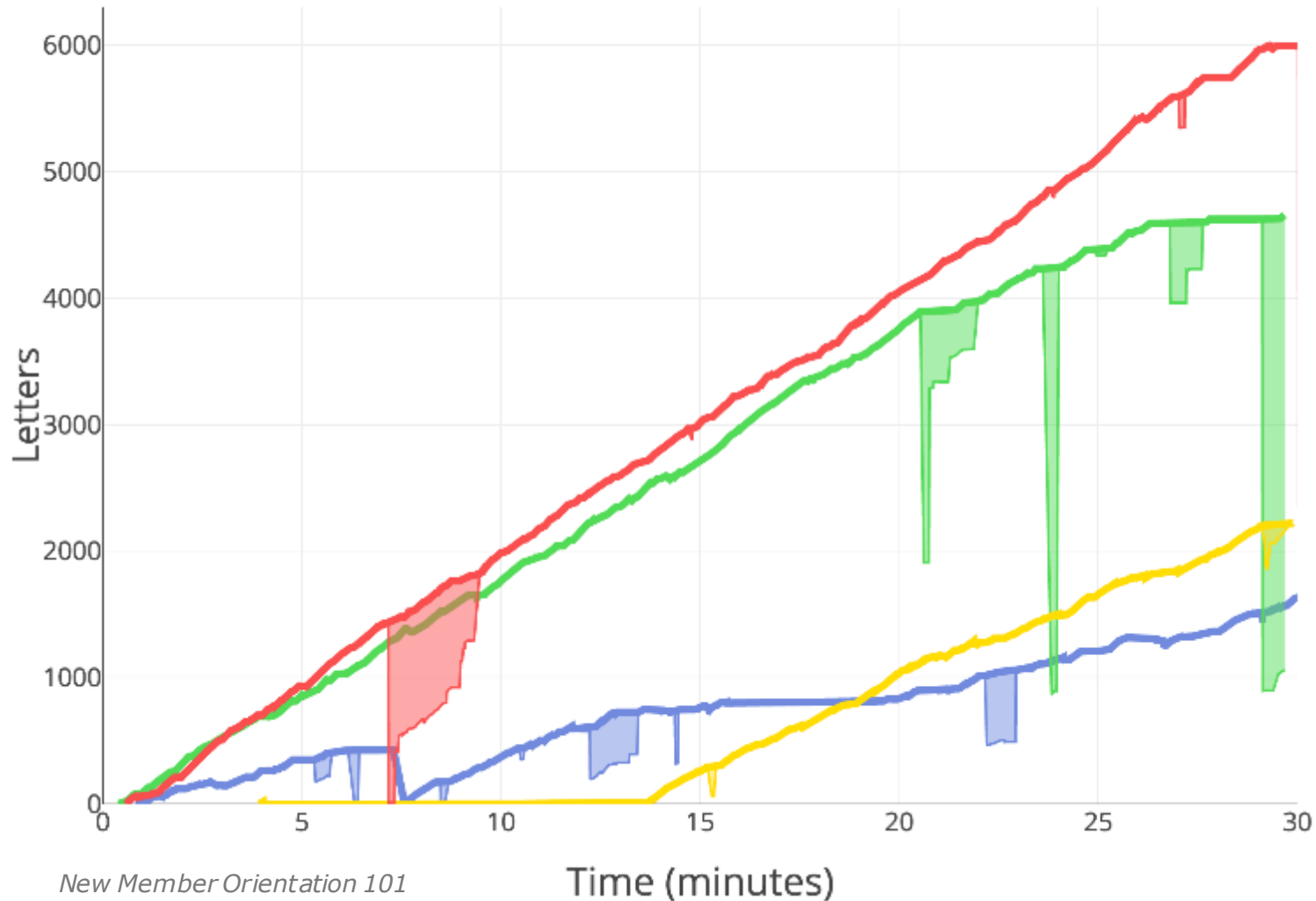
1 2 3 4 5 6 7 8 9 10

QUESTIONS

REVIEW

# Process Data From 2016 Writing

## Essay Length by Writing Time



# Select Sample of NCES Special Studies

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- Mapping **state proficiency standards** on the NAEP scale
- **Linking NAEP** with transcripts and longitudinal studies, and international assessments
- Describing the **condition of education for American Indian and Alaska Native students**
- Examining **achievement gaps**
- Explaining **NAEP methodology**

# Must-See Release Videos

NCES



NCES



NCES



Governing Board



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A  
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# Key Takeaways

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- NAEP results are reported in three major ways: **scale scores, percentile scores, and achievement levels**
- The Governing Board sets, plans, and executes the **release-day event**
- The NCES **Commissioner** releases the data
- NCES conducts **special studies and analyses** to deepen understanding about students' academic achievement
- The Governing Board conducts special studies to **inform decision-making** and to focus attention on results





# Participants, Stakeholders, and Expert Panels

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# Overview of Participants, Stakeholders, and Expert Panels

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- Participants and their contribution
- State and district partners
- Thought leaders, researchers, and expert panels
- Governing Board's outreach efforts

# Participants and Their Contribution

## **School Administrators**

Contextual questionnaire on school policies and characteristics

## **Teachers**

Contextual questionnaire on training and instructional practices

## **Students**

Sample of subject-based cognitive questions

Contextual questionnaire on educational experiences and opportunities to learn

# State and District Support

## State Program Operational Support

- NAEP Support and Service Center
  - Train state coordinators to support data collection and quality control
  - Pre-release workshops

## State and District Partnerships

- NAEP State Coordinators
- Trial Urban District Assessment (TUDA) Coordinators
- Council of the Great City Schools
- Council of Chief State School Officers

## NAEP Ambassadors

- NAEP Ambassadors are former state and district chiefs
- Visit with current chiefs in each state and TUDA district June–September

# Thought Leaders

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- **NCES expert panels**

- NAEP Validity Studies Panel
- Design Analysis Committee
- National Indian Education Study
- NAEP Principals' Panel Standing Committee
- Content standing committees
- Contextual questionnaire standing committees

- **NAEP Innovations Symposium:** discuss the future of large-scale assessments and NAEP

# Governing Board Task Forces and Expert Panels

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- Task forces with Council of Chief State School Officers and Council of the Great City Schools
- Technical Advisory Committees
  - Assessment frameworks
  - Standard setting
- Ad hoc expert panels on specific issues

# Must-See Stakeholder Videos

NCES



**NAEP in a Nutshell**

- It is often called the gold standard of tests and has been around since 1990.
- The subjects most frequently tested are math, reading, science, and writing.
- Not every student or every school takes the test.
- The results are anonymous and if your child is asked to take it, his or her grades won't be affected.
- Accommodations are provided so that as many students as possible can participate.

**How would my child stack up?**

Use real NAEP questions to find out. After each test, dozens of NAEP sample questions are released with The Nation's Report Card to show how real students performed in that subject.

**U.S. History**

As part of the U.S. history assessment, students were asked the purpose of the Declaration of Independence.

**34 percent of fourth-grade students answered correctly.**

**Mathematics**

As part of the math test, students were asked to subtract 48 from 922 and 10 in their answer.

**76 percent of fourth-grade students answered correctly.**

**Give it a try. Test yourself!**

**Science**

Lightning and thunder happen at the same time, but you see the lightning before you hear the thunder. Explain why this is so.

**Do you know the answer? Find out online!**

**U.S. History**

As part of the U.S. history assessment, students were asked the purpose of the Declaration of Independence.

**34 percent answered correctly.**

**Mathematics**

As part of the math test, students were asked to subtract 48 from 922 and 10 in their answer.

**76 percent of fourth-grade students answered correctly.**

**ARE YOU?**

**I tried my best. Mom said it was important!**



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# Key Takeaways

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- Successful NAEP administrations require the **support and cooperation of many participants**—including school administrators, teachers, and students
- Several **state and district partnerships** are the key to NAEP's successful recruitment, administration, and dissemination of results
- NAEP **thought leaders and expert panels** help ensure that NAEP maintains its status as a **gold standard** of large-scale assessments





# Budget

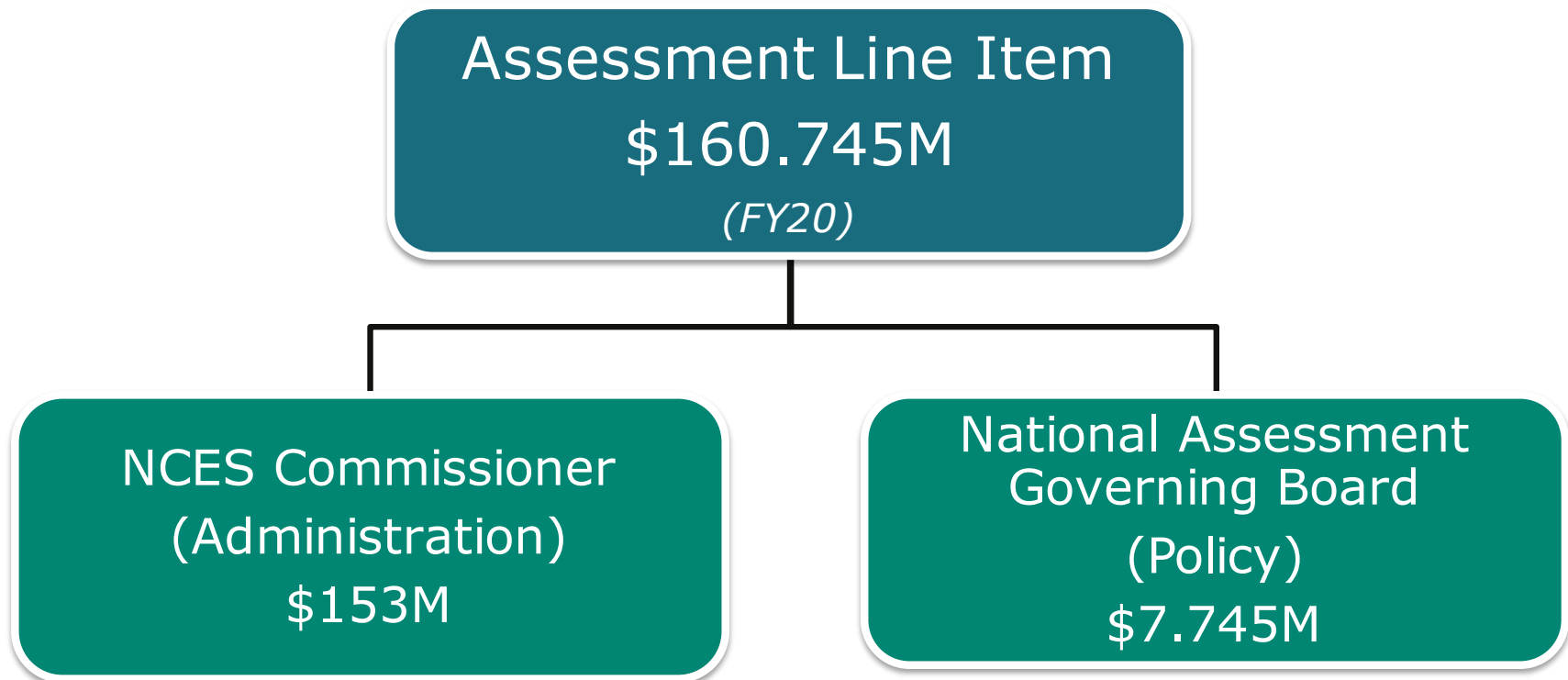
# Overview

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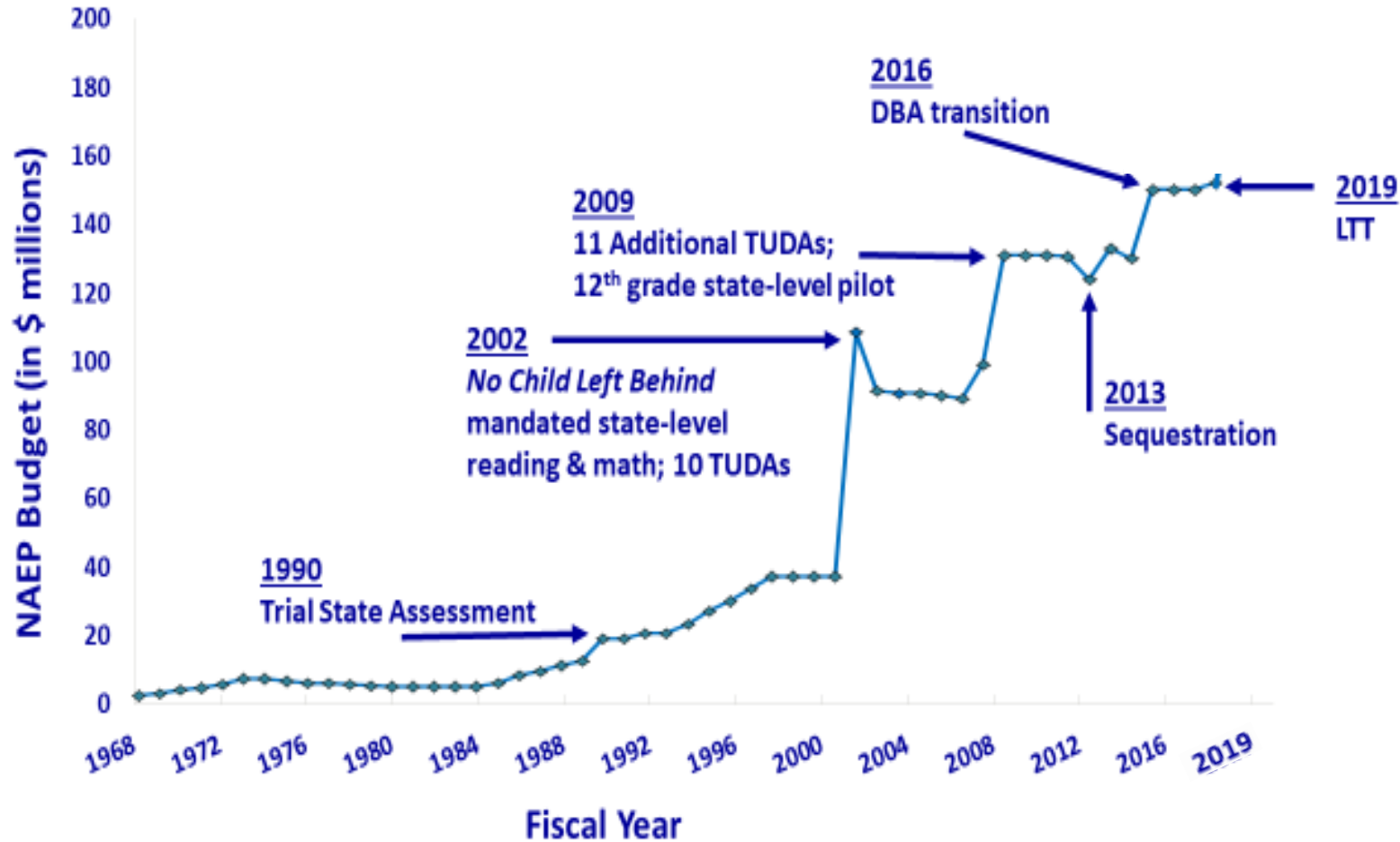
- Funding Trend
- Budgeting Principles
- Cost Drivers

# Budget

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# NAEP Funding Trend



# Budgeting Principles

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- Maintain the **gold standard**
- Implement **Governing Board policies**
- Maintain **efficient design and methodology**
- Invest for the **future**
- Ensure **start-up funds** for next cycle
- Maintain a **positive cash flow**

# Cost Drivers

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- Type of assessment – National, State, TUDA
- Subject(s) to be assessed
- Grade(s) to be assessed
- Number of schools
- Number of students
- Number of accommodation sessions
- Mode of testing
- Types of items
- Method of reporting
- Number of released items
- New frameworks

# Key Takeaways

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- With major policies, NAEP's **budget has grown** since its beginning in 1969
- There are **multiple budgeting factors** that go into maintaining the **gold standard** of assessments
- We need to **balance innovation and programmatic changes** with available funding



# **What Every New Board Member Needs to Know**



# Orientation Highlights

## 1 Governance



- *Public Law 107-279* stipulates that the Governing Board develop policy and oversee NAEP, and that NCES design and administer the assessments
- Law requires administration of NAEP math and reading at grades 4 and 8 every other year

## 2 Assessment Content and Design



- A random sample of students receives a portion of cognitive items
- Math, reading, science, and writing are sampled at the national and state levels; all other subjects are at the national level only

# Orientation Highlights

## 3 Development and Administration



- Governing Board defines content to be assessed and develops content frameworks and specifications
- NCES develops assessment items and collects, scores, analyzes, and reports on assessment data
- Assessment cycle can span up to five years

## 4 Reporting and Dissemination



- NAEP results are reported as scale scores, percentile scores, and achievement level percentages
- Governing Board sets, plans, and executes the release-day event; NCES Commissioner releases the data
- NCES and the Governing Board conduct special studies and analyses

# Orientation Highlights

## 5 Participants, Stakeholders, and Expert Panels



- Successful NAEP administrations require support from many participants and relationships with state and district assessment leaders
- NAEP thought leaders and expert panels help ensure that NAEP maintains its high quality

## 6 Budget



- There are multiple budgeting factors that go into maintaining the gold standard of assessments
- We need to balance innovation and programmatic changes with available funding

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# Questions?

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